

Know Your Systems Back to Black

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A ferry was sailing through the night when the duty engineer noticed an alarm indicating low compressed air pressure. He went to investigate and found that both main air compressors were running, but the air receivers were empty. The discharge pipe from one of the compressors had sheared, and because of the way the system was designed he could not isolate the leak.

The duty engineer tried to make a repair, but had to stop after 30 minutes to respond to a high water temperature alarm on the main engines. The duty engineer called for help and the chief engineer and first engineer came down immediately.

Unfortunately, by this time the air had gone from the control system and both main engines stopped. The shaft generators came off load as the shafts stopped, and there was no air left to start the main generators. The emergency generator started, but did not run for long because its ventilation openings were left shut, causing it to overheat.

Fortunately the ferry was in open sea and in no immediate danger. Nevertheless, the owners called a tug to stand by while repairs were carried out.

During the time the engineers took to repair the air system, the fuel for the main engines had gone cold. Consequently, the passengers spent nearly 2 hours in the dark before the engineers got the main generators started.

The ferry finally got underway again 5 hours after the duty engineer first noticed the low pressure alarm.

The Lessons

- 1. Ask for help promptly. When machinery breaks down, the first priority must be to prevent the situation from getting worse. This can be very hard to do if you are on your own, particularly if you then get involved in repairs.**
- 2. It is essential to understand how the machinery systems depend on one another and then think ahead to prevent damage and make recovery easier. In this case, loss of starting air also led to loss of the main engine control system, a high temperature alarm and the engines shutting down. This might have been avoided if the link had been appreciated early on.**
- 3. More advanced systems may cost extra, but a few additional valves to isolate systems or bypass leaks can be worth considerably more during an emergency.**
- 4. Take time to check that emergency generators and fire pumps are going to run properly. You never know when you might need them.**